A
COMPENDIUM
O[illegible]
LOGICK.

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MDCCL.

A
Compendium of Logick.

BOOK I. CHAP. I.

Of Simple Terms.

SECT. I.

THE Operations of the Mind are three, *Simple Apprehenſion*, *Judgment*, *Diſcourſe*.

Simple Apprehenſion, is the bare conceiving a Thing in the Mind.

Judgment, is The Mind's determining in itſelf, that the Things it conceives agree or diſagree.

Diſcourſe, is The Progreſs of the Mind, from one Judgment to another.

But our Apprehenſion is apt to be *Indiſtinct*, our Judgment *Falſe*, our Diſcourſe *Inconcluſive*. To prevent this, Wiſe Men preſcribed ſeveral Rules, which were at length collected into One Body: And term'd *Logick*, or The Art of Reaſoning.

SECT. II.

BUT we cannot expreſs to another what paſſes in our own Mind, any otherwiſe than by *Words*. It is therefore by teaching us the proper Uſe of Words, that Logick aſſiſts the Mind, 1. To apprehend diſtinctly, 2. To judge truly, 3. To diſcourſe concluſively.

A Word that expreſſes Simple Apprehenſion is call'd a *Simple Word*, One that expreſſes Judgment, a *Complex*; One that expreſſes Diſcourſe, a *Decomplex*. For every Argument is reſolvible into three *Propoſitions* or Sentences. And every Propoſition contains Three Words (in Senſe, if not in Number) 1. The *Subject*, or that of which ſomething elſe is ſaid, 2. The *Predicate*, or that which is ſaid, and 3. The *Copulative*, that ſtands between the Subject and Predicate, which are therefore call'd, The *Terms* of the Propoſition.

SECT. III.

THE Firſt Part of Logick treats of *Simple Terms*, which are of ſeveral Sorts: as

1. A *Singular* Word, which expreſſes One Thing only, as *Socrates:* A *Common*, which expreſſes many and each of them, as, *a Man*.

2. An *Infinite* Word, to which the Particle *not* is prefixt, as, *not a Man*, which may imply any Thing beſides: A *Finite*, to which that Particle is not prefixt.

3. A *Poſitive* Word, which expreſſes a Thing as preſent: A *Privative*, which expreſſes its Abſence from a Subject capable of it: A *Negative*, which expreſſes its Abſence from a Subject not capable of it. So *a Man* is a *Poſitive* Word: *Blind*, ſpoken of *a Man*, is a *Privative:* Spoken of *a Stone*, a *Negative* Word.

4. An *Univocal* Word, which is equally applicable to ſeveral Things, in one and the ſame Senſe, as *a Man:* An *Equivocal*, which is equally applicable to ſeveral Things, but in different Senſes, as *a Foot:* An *Analogous*, which is applicable to ſeveral Things in nearly but not altogether the ſame Senſe; as *Knowledge*, applied to GOD and Man.

5. An *Abſolute* Word, which expreſſes a Thing conſider'd by itſelf, as *Juſtice:* A *Connotative,* which expreſſes it as join'd to ſomething elſe, as *Juſt.* The former is likewiſe call'd an *Abſtract,* the latter, a *Concrete* Word.

Thoſe Connotative Words which imply each other, are term'd *Relatives,* as a Father and Son.

6. *Conſiſtent* Words, which may be affirmed of the ſame Thing, as *Cold* and *Dry:* Oppoſite, which cannot, as *Black* and *White.*

The *Oppoſition* of Simple Terms is Fourfold; 1. *Relative,* between *Relative* Terms, as *a Father and a Son:* 2. *Contrary,* between *Contrary* Terms, that is, *Abſolute* Words, which expell one another from a Subject capable of either, as *Blackneſs and Whiteneſs:* 3. *Privative,* between a *Privative* and a *Poſitive* Word, as *Seeing and Blind.* 4. *Contradictory,* between a *Poſitive* and a *Negative* Word, as *Finite and Infinite.* This is the greateſt of all Oppoſitions, as admitting of no *Medium:* Neither a *Medium of Participation,* ſuch as is *Grey,* between black and white: Nor a *Medium of Abnegation;* ſuch as is *a Stone,* between *ſeeing and blind.* *Relative* Oppoſition, (on the other Hand, is the Leaſt of all: For Relative Terms are not Oppoſites, unleſs they are conſider'd in the ſame Reſpect.

SECT. IV.

A Common Word is otherwiſe call'd a *Predicable,* or a Word capable of being *predicated,* that is, univocally ſpoken of ſeveral Things.

There are Five Sorts of *Predicable* Words, 1. A *Genus,* which is predicated of ſeveral Things as the Common Part of their Eſſence, as *an Animal.* 2. A *Difference,* which is predicated of ſeveral Things, as the diſtinguiſhing Part of their Eſſence, as *Rational:* 3. A *Species,* which is predicated of ſeveral Things, as their whole Eſſence, as *a Man:* 4. A *Property,* which is predicated of ſeveral Things, as neceſſarily join'd to their Eſſence, as *Riſible.* 5. An *Accident,* which is predicated of ſeveral Things as accidentally join'd to their Eſſence, as *tall, ſhort.*

SECT. v.

A *Genus* is either *the Higheſt,* or a *Subaltern:* A *Species* is either a *Subaltern* or the *Loweſt.* The *Higheſt Genus* is that which never is a *Species;* the *Loweſt Species,* that which never is a *Genus:* A *Subaltern Genus* or *Species,* is a Genus when predicated of a *Lower Species,* as *Every Man is an Animal;* a Species when ſubjected to an *Higher Genus,* as, *every Animal is a Subſtance.*

Wherefore a *Difference* is either *Generical,* which added to the *Genus,* conſtitutes a *Subaltern Species,* as *Senſible:* Or *Specifick,* which conſtitutes the *Loweſt Species,* as *Rational.*

A *Property* likewiſe is either *Generical,* which is neceſſarily join'd to the Eſſence of an *Higheſt* or *Subaltern Genus,* as *Moveable:* Or *Specifick,* which is join'd to that of a Loweſt Species, as *Riſible.*

But a Property is vulgarly ſaid to be Fourfold. 1. Such as belongs to one Species only, but not to every Individual of it: as, *To be a Grammarian:* 2. Such as belongs to every Individual of a Species, but not of that Species only, as, *to have two Feet:* 3. Such as belongs to one Species and every Individual, but not always, as *To turn Grey-hair'd:* 4. Such as belongs to every Individual of one Species only, and that always, as *Riſibility.* It is ſuch a Property as this, which conſtitutes the Fourth Predicable.

SECT. VI.

To *divide* a Common Word is, To enumerate its ſeveral Significations. So he is ſaid, to *divide* the Word *Animal*, who ſays, It ſignifies either a Man or a Brute.

Diviſion is therefore, A diſtinct Enumeration of the ſeveral Things which are ſignified by a Common Word.

The Rules of Diviſion are three:

1. Let the *Members of the Diviſion*, ſeverally *contain leſs* (be of a narrower Signification) than the *Word Divided:* 2. Let them conjointly contain neither more nor leſs than the Divided: 3. Let them be *oppoſite*, i. e. not contain'd in each other.

SECT. VII.

Definition follows Diviſion. It is, a Sentence explaining the Word Defined: And is either *Nominal*, which tells the Derivation of the Word; or *Real* which explains the Nature of the Thing. Again, a Real Definition is either *Accidental*, which aſſigns the Properties or Accidents of the Defined: Or *Eſſential*, which aſſigns thoſe Parts that conſtitute the Eſſence of it. Laſtly, An Eſſential Definition is either *Logical* which aſſigns the Genus and Difference, or *Phyſical*, which aſſigns the really diſtinct Parts of its Eſſence, for the Genus and Difference are only diſtinguiſhed by the Underſtanding.

For Example. *Homo* is defined *nominally*, *qui ex humo: Accidentally*, a two-legg'd, unfeather'd Animal: *Logically*, a rational Animal; *Phyſically*, a Being conſiſting of an organized Body and a reaſonable Soul.

The Rules of Definition are three: 1. Let the Definition be *adequate* to the Defined: 2. Let it be *clearer* and *plainer* than the Defined: 3. Let it be contain'd in a *fit Number* of *Proper* Words.

CHAP. II.

Of PROPOSITIONS.

SECT. I.

THE Second Part of Logick treats of *Propoſitions*, which is Judgment expreſs'd in Words.

A regular Propoſition is, An Affirmative or Negative Sentence, ſignifying either True or Falſe; Not ambiguous (for then it would be Sentences:) Nor maim'd; for then it would have no Signification.

It is either *Categorical*, which pronounces a Thing abſolutely, as *Plato is happy*: Or *Hypothetical*, which pronounces conditionally, as, *If he is wiſe, then he is happy*.

Again, a Propoſition is either *Affirmative* or *Negative*; And is either *True* or *Falſe*. This is call'd the *Quality* of it.

Laſtly, it is either *Univerſal*, as, *All Men are Animals*, Or, *Particular*, as, *Some Men are learn'd*. This is call'd, The *Quantity* of it.

SECT. II.

A is put for an Univerſal Affirmative Propoſition, E for an Univerſal Negative, I for a Particular Affirmative, O for a Particular Negative.

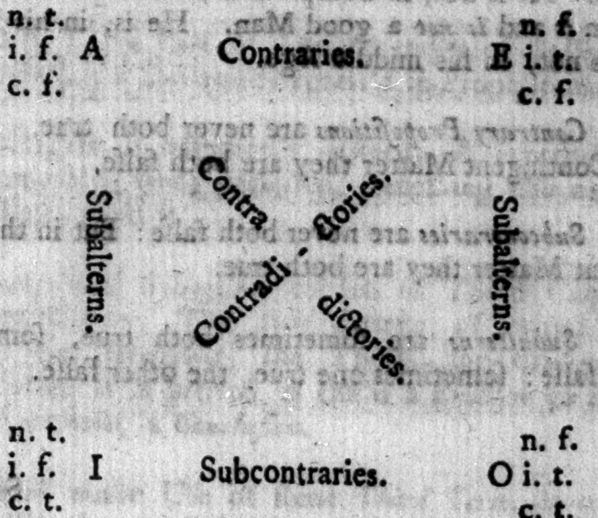
In an Univerſal Affirmative, the Subject only is *diſtributed,* (i. e. taken in its full Senſe) in a Particular Negative only the Predicate: In a Particular Affirmative, neither Term is diſtributed; In an Univerſal Negative, both.

The *Matter* of a Propoſition (i. e. the Manner wherein the Terms cohere) is either 1. *Neceſſary,* when they eſſentially agree, or 2. *Impoſſible,* when they eſſentially differ, or 3. *Contingent,* when they agree or differ accidentally.

SECT. III.

THOSE Propoſitions are ſaid to be *oppoſed,* which having the ſame Subjects and Predicates, yet differ either in Quantity, or in Quality, or both.

The whole Doctrine of Oppoſition is contain'd in this Scheme:



Here A. E. I. O. are four Propoſitions, mark'd according to their Quantity and Quality, which are t. f. true or falſe, as the Matter of the Propoſition is n. i. c. neceſſary, impoſſible or contingent. Hence it is eaſy, 1. To enumerate the Species of Oppoſition, which are *Contradictory*, *Contrary*, *Subcontrary* and *Subaltern*. 2. To define each. For example. Contradictory Oppoſition, is that which is between Two Categorical Propoſitions, differing both in Quantity and Quality, *&c.* 3. To lay down the Rules of Oppoſites, as follow:

1. *Contradictory Propoſitions* are never both true or both falſe, but always one true, the other falſe.

But obſerve, Four Things are required to make a Contradiction, namely, to ſpeak of the ſame Thing, 1. In the ſame Senſe; 2. in the ſame Reſpect; 3. with Regard to the ſame third Thing, and 4. at the ſame Time. If any of theſe Conditions be wanting, *is* and *is not* may agree. For Inſtance. 1. An Opinion *is* and *is not* Faith. It is *dead* Faith, it is not *living* Faith. 2. Zoilus *is* and *is not* red-hair'd. He is, with Reſpect to his Head: He is not, with Reſpect to his Beard. 3. Socrates *is* and *is not* long-hair'd. He is, in Compariſon of Scipio: He is not, in Compariſon of Xenophon. 4. Solomon *is* and *is not* a good Man. He is, in his Youth. He is not, in his middle Age.

2. *Contrary Propoſitions* are never both true. But in the Contingent Matter they are both falſe.

3. *Subcontraries* are never both falſe: But in the Contingent Matter they are both true.

4. *Subalterns* are ſometimes both true, ſometimes both falſe: ſometimes one true, the other falſe.

SECT. IV.

A Propoſition is ſaid to be *converted*, when its Terms are tranſpoſed. This is done either, 1. *Simply*, when neither the Quantity nor Quality; Or 2. *Accidentally*, when the Quantity is changed.

An Univerſal Negative, or a Particular Affirmative may be ſimply converted, and the Inference will hold. An Univerſal Affirmative muſt be converted Accidentally, or the Inference will not hold.

CHAP. III.

Of SYLLOGISMS.

SECT. I.

THE Third Part of Logick treats of *Syllogiſm*, which is a Diſcourſe expreſs'd in Propoſitions.

A Syllogiſm is commonly defined, A Sentence in which ſomething being premiſed, ſomething elſe neceſſarily follows from it.

A *Categorical Syllogiſm*, conſiſts of Three Categorical Propoſitions: The two former of which are term'd, the *Antecedent*, the Third, the *Conſequent*. Which before it is proved is call'd a *Problem* or *Queſtion*; afterwards, a *Concluſion*.

We muſt make Uſe of ſome *Third Term*, in order to find, Whether the Subject and Predicate of a Queſtion agree: And that, becauſe of the following Rules, on which the whole Force of Syllogiſm is founded.

1. Thoſe Terms which agree with one and the ſame Third, agree with one another.

2. Thoſe Terms, one of which agrees, the other diſagrees with one and the ſame Third, differ from one another.

3. Thoſe which do not agree with one and the ſame Third, do not agree with one another.

SECT. II.

From theſe general Principles, the Particular Rules of Syllogiſm are thus deduced.

1. In every Syllogiſm, there are three, and only three Terms: Two in the Concluſion: And theſe can neither be prov'd to agree nor to differ, without One and only one Third Term.

The Predicate of the Queſtion is ſtiled the *Major Term*; the Subject, the *Minor*, the Third Term, the *Medium* or *Middle* Term. For the Predicate is commonly more comprehenſive than the *Medium*, as the Medium is than the Minor.

2. In every Syllogiſm there are Three and three only Propoſitions: Two *Premiſſes*, in which the Medium is compared with the Two other Terms ſeverally (the *Major Propoſition*, in which it is compared with the Major Term, the *Minor Propoſition*, in which it is compared with the Minor Term) and the *Concluſion*, in which both thoſe Terms ſtand together.

3. An Equivocal Medium proves nothing. For This is not One and the ſame Third.

4. An *undiſtributed* Medium is equivocal. Therefore

5. The Medium muſt be diſtributed in one of the Premiſſes.

6. The Proceſs from a Term not diſtributed in the Premiſs, to the ſame diſtributed in the Concluſion is irregular.

7. Negative Premiſſes prove nothing. For in this Caſe a Third is brought, from which both the Terms differ.

8. If either of the Premiſſes is Negative, ſo is alſo the Concluſion.

9. And, If the Concluſion be Negative, ſo is alſo one of the Premiſſes.

10. Particular Premiſſes prove nothing.

11. If either of the Premiſſes be particular, ſo is alſo the Concluſion.

SECT. III.

IT remains to enquire, How many Ways Three Categorical Propoſitions can be join'd together, ſo as to compoſe a Regular Syllogiſm. In which Inquiry, two Things are to be conſider'd.

1. The *Mood*, or the Variation of the Propoſitions according to their Quantity and Quality:

2. The *Figure*, or The Manner of comparing the Medium, with the Terms of the Concluſion.

There are Sixty Four Moods. For the Major of a Syllogiſm may be either A. E. I. or O. To each of theſe a fourfold Minor may be annext, whence ariſe ſixteen Pair of Premiſſes. And to each of theſe ſixteen a fourfold Concluſion may be ſubjoin'd, thus

AAA. AAE. AAI. AAO: AEA. AEE. AEI. AEO:
AIA. AIE. AII. AIO: AOA. AOE AOI. AOO.
EAA. EAE. EAI. EAO: EEA. EEE. EEI. EEO.
EIA. EIE. EII. EIO: EOA. EOE. EOI. EOO.
IAA. IAE. IAI. IAO: IEA. IEE. IEI. IEO:
IIA. IIE. III. IIO: IOA. IOE. IOI. IOO.
OAA. OAE. OAI. OAO: OEA. OEE. OEI. OEO.
OIA. OIE. OII. OIO: OOA. OOE. OOI. OOO.

But ſixteen of theſe are excluded by the ſeventh Rule, becauſe their Premiſſes are Negative, viz. EEA. EEE. EEI. EEO: EOA. EOE. EOI. EOO: OEA. OEE. OEI. OEO: OOA. OOE. OOI. OOO: Twelve by the Tenth Rule, becauſe their Premiſſes are Particular: viz. IIA. IIE. III. IIO: IOA. IOE. IOI. IOO: OIA. OIE. OII. OIO: Twelve by the eighth Rule, becauſe one of the Premiſſes is Negative and not the Concluſion: AEA. AEI. AOA. AOI. EAA. EAI. EIA. EII. IEA. IEI. OAA. OAI. Eight by the Eleventh Rule, becauſe One of the Premiſſes is Particular, and not the Concluſion, AIA. AIE. AOE. EIE. IAA. IAE. IEE. OAE. Laſtly, Four by the Ninth Rule, becauſe the Concluſion is Negative, but neither of the Premiſſes: AAE. AAO. AIO. IAO.

Therefore Fifty two Moods are excluded, many of which offend againſt ſeveral Rules. There remain Twelve, which only are uſeful in Syllogiſm, AAA. AAI. AEE. AEO. AII. AOO: EAE. EAO. EIO: IAI. IEO. OAO.

SECT.

SECT. IV.

THE *Figures* of Syllogiſm are Four. For the Medium is either ſubjected to the Major and predicated of the Minor Term, which is the Firſt Figure: Or predicated of both, which is the Second: or ſubjected to both, which is the Third: Or predicated of the Major and ſubjected to the Minor, which is the Fourth: As appears in the following Scheme, wherein A is the Major Term, B the Medium, C the Minor.

1 Fig.	2 Fig.	3 Fig.	4 Fig.
B. A.	A. B.	B. A.	A. B.
C. B.	C. B.	B. C.	B. C.
C. A.	C. A.	C. A.	C. A.

Wherefore of the twelve remaining Moods, each Figure excludes Six. Namely,

1. Becauſe of the undiſtributed Medium, the Firſt Two, IAI. OAO: The Second Four, AAA. AAI. AII. IAI: The Fourth Two, AII. AOO.

2. Becauſe of the Irregular Proceſs of the Major Term, the Firſt Figure excludes Four Moods, AEE. AEO. AOO IEO: The Second Two, IEO OAO: The Third Four, AEE. AEO. AOO. IEO: The Fourth Two, IEO. OAO.

3. Becauſe of the Irregular Proceſs of the Minor Term, the Third Two, AAA. EAE: The Fourth Two, AAA. EAE.

There remain Twenty-four concluſive Moods, Six in each Figure.

The FIRST FIGURE.

bAr Every B is A.
bA Every C is B: Therefore
rA Every C is A.

cE No B is A.
lA Every C is B: Therefore
rEnt No C is A.

dA Every B is A.
rI Some C is B: Therefore
I Some C is A.

fE No B is A.
rI Some C is B: Therefore
O Some C is not A.

A Every B is A.
A Every C is B: Therefore
I Some C is A.

E No B is A.
A Every C is B: Therefore
O Some C is not A.

The SECOND FIGURE.

cEs No A is B.
A Every C is B: Therefore
rE No C is A.

cAm Every A is B.
Es No C is B: Therefore
trEs No C is A.

fEs No A is B.
tI Some C is B: Therefore
nO Some C is not A.

bAr Every A is B.
Ok Some C is not B: Therefore
O Some C is not A.

E Some

E No A is B.
E No C is B: Therefore
O No C is A.

A Every A is B.
E No C is B: Therefore
O No C is A.

The Third Figure.

dAr Every B is A.
Ap Every B is C: Therefore
tI Some C is A.

fEl No B is A.
Ap Every B is C: Therefore
tOn Some C is not A.

dIs Some B is A.
Am Every B is C: Therefore
Is Some C is A.

bOk Some B is not A.
Ar Every B is C: Therefore
dO Some C is not A.

dAt Every B is A.
Is Some B is C: Therefore
I Some C is A.

fEr No B is A.
Is Some B is C: Therefore
On Some C is not A.

The Fourth Figure.

brAm Every A is B.
An Every B is C: Therefore
tIp Some C is A.

cAm Every A is B.
En No B is C: Therefore
Es No C is A.

dI Some A is B.
mA Some B is C: Therefore
rIs Some C is A.

fEs No A is B.
Ap Every B is C: Therefore
O Some C is not A.

frEs No A is B.
Is Some B is C: Therefore
On Some C is not A.

A Every A is B.
E No B is C: Therefore
O Some C is not A.

SECT. v.

THE four Firſt of theſe Moods need nothing to make the Force of the Inference evident, but what is expreſt in the Premiſſes. Whereas all the Reſt do. Theſe therefore are ſtiled *Perfect*, thoſe *Imperfect* Moods.

An Imperfect Mood is ſaid to be *reduced*, when it is changed into a Perfect one: In order to ſhew evidently, either that the Concluſion is ſo, (which is term'd *Oſtenſive Reduction:)* Or, That it cannot be otherwiſe, which is call'd *Reduction ad impoſſibile*.

The Method of reducing is taught by the Names of the Moods: In which the Vowels are the Propoſitions mark'd with their Quantity and Quality: The Initial Conſonants, B. C. D. F. ſhew to what Mood in the Firſt Figure the Reduction is to be made: S. P. ſhew that the Propoſition which the preceding Vowel ſtands for, is to be converted, either Simply or Per Accidens: M, that the Premiſſes are to be tranſpoſed: K, that the Reduction is to be *ad impoſſibile: i. e.* That for the Premiſs to whoſe Sign it adheres, the Contradictory of the Concluſion is to be placed: Which being done, you will have in the Firſt Figure, either the ſame Concluſion,

ſion, or one Convertible into it, or its Contradictory. Thus

1. cEs No happy Man is diſcontented,
Ar Every wicked Man is diſcontented: Therefore
E No wicked Man is an happy Man.

Reduce this to

cE No diſcontented Man is an happy Man,
lA Every wicked Man is diſcontented: Therefore
rEnt No wicked Man is an happy Man.

2. dIs Some good Men are Papiſts,
Am Every good Man is ſaved: Therefore
Is Some that are ſaved are Papiſts.

Reduce this to

dA Every good Man is ſaved:
rI Some Papiſts are good Men: Therefore
I Some Papiſts are ſaved.

3. bAr Every good Man is afflicted:
Ok Some rich Men are not afflicted: Therefore
O Some rich Men are not good Men.

Reduce this to

bAr Every good Man is afflicted:
bAr Every rich Man is a good Man——
A

The manifeſt Falſhood of which proves as manifeſtly the Truth of its Contradictory.

SECT. VI.

FROM what has been ſaid, it is evident, That there can be no more Moods than theſe Twenty four. They are therefore miſtaken, who having tranſpoſed the Premiſſes, or converted the Concluſion of a Syllogiſm, imagine they have found out a New Mood or Figure:

To convince them of which, you need only refer to the Definition of a Mood, a Figure, of a Major, a Minor, a Middle Term, and of a Major and Minor Propoſition.

But there are ſome Sorts of Arguments, which tho' not ſtrictly regular, yet need not be wholly rejected. Such are

1. An *Enthymeme*, one Premiſs of which is wanting, whether the Major or Minor, the Concluſion ſhews. As, *He is a Good Man. Therefore he is Happy.*

Sometimes the whole Argument lies in one Sentence, as, *Being mortal, do not bear immortal Hatred.*

2. An *Induction*, in which what is granted of ſeveral Particulars, is then affirm'd univerſally; As, *This and this and that Loadſtone attracts Iron; therefore, Every Loadſtone does.* It is therefore a ſort of Enthymeme; A Syllogiſm in Barbara, whoſe Minor is underſtood.

3. An *Example*, wherein what is granted of a Known Inſtance, is preſumed of an Unknown that reſembles it. As, Sylla *and* Marius *tore the Common Wealth. Therefore ſo will* Ceſar *and* Pompey. Here alſo the Minor is underſtood. Therefore the Concluſion is only preſumed, not proved.

4. A *Sorites*, in whoſe Antecedent every preceding Term is ſubjected to the following, till you come from the Subject of the Concluſion to the Predicate of it. As, *Every Man is an Animal; Every Animal is a Living Creature; Every Living Creature is a Subſtance, therefore every Man is a Subſtance.* In a *Sorites* as many Syllogiſms are underſtood, as there are intermediate Propoſitions.

CHAP. IV.

Of HYPOTHETICAL SYLLOGISMS.

SECT. 1.

THAT is a *Hypothetical Syllogiſm*, in which One or more of the Propoſitions are Hypothetical. The moſt common (of which alone we now ſpeak) is that, whoſe Major Propoſition is Hypothetical.

An Hypothetical Propoſition is either *Conditional*, as, *If he is wiſe, he is happy:* Or, *Disjunctive*, as *Either it is Day or Night.*

In a *Conditional* Propoſition, the *Condition* itſelf is call'd the *Antecedent*, the Aſſertion, the *Conſequent*, the Connexion between them, the *Conſequence.*

The Rules of Conditional Propoſitions are three.

1. If the Antecedent be granted, ſo is the Conſequent:

2. If the Conſequent be taken away, ſo is the Antecedent:

3. Nothing can be infer'd, either from the taking away the Antecedent or granting the Conſequent.

There are therefore only Two Terms of Conditional Syllogiſm: The *Conſtructive:* As

If CD, then KΔ: But CD: Therefore KΔ.

And the *Deſtructive*: As

If CD, then KΔ: But not KΔ: Therefore not CD.

SECT. II.

EVERY Conditional Syllogiſm is either equivalent to a Categorical, or wholly to be rejected. For in every Concluſive Conditional, there is a Categorical implied, in which the ſame Argument would prove the ſame Concluſion.

For in all Hypothetical Syllogiſms, the Major Propoſition conſiſting of two Categoricals, the Minor is either One of theſe, or the Contradictory to it, in order to infer, either the other, or its Contradictory. In either Caſe an Enthymeme will be propoſed, whoſe Force lies in the Conditional Propoſition, and which is not concluſive, unleſs from that Propoſition there can be drawn a *Completory*, that is, the Premiſs which is wanting in an Enthymeme, to complete the Syllogiſm.

Now, as an Enthymeme is only one Premiſs with the Concluſion of a Syllogiſm, it has Three and only three Terms. Suppoſe Two of them are D and Δ, and C the Third Term. The other Premiſs, whoſe Terms are D and Δ are wanting. Hence it follows, that according to the various Diſpoſition of the Terms, there are Four Forms of Enthymeme: Each of which will admit of a twofold Completory, as in this Scheme.

The Enthymeme.		The Completory	D. Δ.	Δ. D.
CD.	therefore CΔ.	The Major	in Fig. I.	in Fig. II.
DC.			in Fig. III.	in Fig. IV.
CD.	therefore ΔC.	The Minor	in Fig. IV.	in Fig. II.
DC.			in Fig. III.	in Fig. I.

Wherefore as there are 24 Poſſible Moods of Categorical Syllogiſm, and 14 unexceptionable ones; and as each Figure may be applied twice, to compleat an Enthymeme: there will be 48 poſſible Ways of compleating it, 28 unexceptionable. And as many Ways as an Enthymeme may be compleated, ſo many and no more, a Man may argue with a Syllogiſm, whoſe Major is Conditional.

SECT. II.

THE Directions given for *Conditional* Propoſitions, ſerve equally for *Disjunctive*. For any Disjunctive is eaſily turn'd into a Conditional. For Inſtance, if it runs thus,

It is either Day, or Night.
But it is Day: Therefore it is not Night.
But it is Night: Therefore it is not Day.
It is not Day: Therefore it is Night.
It is not Night: Therefore it is Day.

Inſtead of this, it is eaſy to ſay,

If it is Day, then it is not Night.
If it is Night, then it is not Day.
If it is not Day, then it is Night.
If it is not Night, then it is Day.

SECT. III.

THERE remains only a kind of redundant Hypothetical Syllogiſm call'd a *Dilemma*, which propoſes two (or more) Things to your Choice, by accepting either of which, you loſe the Cauſe. Such is that of *Bias*, *If you Marry a Beautiful Woman ſhe will be* κοινή, *if an ugly one* ποινή. *Therefore Marry none.*

A Dilemma is of no Force, unleſs 1. One or the other Part muſt be accepted, 2. Either one or the other prove the Point, and 3. It cannot be retorted. If

Bias had obſerv'd theſe Things, he would have been leſs pleas'd with his own: for it fails in every Particular. For 1. A Wiſe may neither be *Beautiful* nor *Ugly*. Therefore neither Part of the Dilemma need be accepted. 2. Neither is every beautiful Woman *Common*, nor every Ugly one a *Plague*. Therefore neither Part of it proves the Point. 3. It may be retorted, thus: If I Marry the *one*, at leaſt ſhe will *not* be Common, if the *other*, ſhe will *not* be a Plague.

A Dilemma is only a kind of Negative Induction, in which the Major Propoſition is Conditional: As, *If at all, then thus, or thus, or thus*. To turn this into a Categorical Propoſition, is ſo eaſy, it needs no Direction.

A
Compendium of LOGICK.

BOOK II. CHAP. I.

Of SYLLOGISM, *as to its Matter.*

SECT. I.

HITHERTO we have ſpoken of Syllogiſm as to its *Form*. It remains, to ſpeak of it, as to its *Matter*; that is, the *Certainty* and *Evidence* of the Propoſitions, whereof it is compoſed.

That is a *certain* Propoſition, againſt which nothing occurs, or nothing of Weight, as, *Man is riſible:* That an *evident* one, which extorts the Aſſent, as ſoon as it is underſtood, as, *The whole is greater than its Part:* That a *Doubtful* one, in which we know not how to determine, as, *The Stars influence Men.*

If any Thing occurs, whereby the Mind inclines to either ſide, that which was Doubtful before, becomes *Probable.* Such an Aſſent is term'd *Opinion.*

Opinion therefore reſpects a barely Probable Propoſition, and implies no Certainty at all. Yet there are ſeveral Degrees whereby it approaches toward Certainty; and the higheſt Degree of Probability is not far diſtant from it.

SECT. II.

Certainty is twofold; 1. that of the *Object*, the Thing to be perceiv'd, and 2. that of the *Subject*, the Underſtanding which perceives it. And both have their Degrees. That is more Certain, in the former Senſe, to which there *is* the leaſt Objection; That, in the latter Senſe, to which the leaſt Objection *appears*. Evidence alſo is either of the *Object* or of the *Subject*. And both of theſe have their Degrees: According as that which is perceiv'd, *is* more or leſs Self-evident; Or *appears* to be one or the other.

We might enumerate many Degrees of *Evidence*. But it may ſuffice to obſerve, it is either 1. That of a Self-evident Axiom, or, 2. That of a Concluſion regularly deduced therefrom. This Logicians term *Science*, which accordingly they define, An Aſſent to a certain and evident Concluſion, regularly deduced from certain and evident Premiſſes. The Certainty and Evidence here ſuppoſed, is that, both of the Object, and of the Subject. For by the former, Science is diſtinguiſht from *Error*; by the latter, from *Opinion*. Without the Evidence of the Subject there can be no *Science:* And this without the other, is but imaginary Evidence.

SECT. III.

We need not *prove*, That there is ſuch a Thing as Certainty; ſeeing all reaſonable Men allow it. We freely aſſent to what is affirm'd by a wiſe and good Man: And more freely, if he confirms it by Reaſon. Some Things we are taught by Nature itſelf: And ſome by Divine Revelation. And of all theſe we have ſufficient Certainty, altho' in various Degrees.

To aſſent to Teſtimony is the ſame as to *believe:* And ſuch an Aſſent is term'd *Faith*. *Divine* Faith depends on the Teſtimony of GOD: *Human* Faith, on the Teſtimony of Man. What Nature dictates, we may be ſaid to *perceive*; what Reaſon teaches us, to *know*.

GOD can neither deceive nor be deceiv'd: Men are often deceiv'd and often deceive. Reaſon and Nature are not often deceiv'd, and ſeldom deceive their Followers. Nothing therefore is more firm than Divine Faith; nothing leſs ſo than Human. In what we *perceive* or *know*, there is often no *Fear*, always ſome *Danger* of being deceiv'd. Hence there is the higheſt Reſt for the Mind in Divine Faith; the loweſt of all, in Human. In what we *know* or *perceive*, there are various Degrees of Reſt, according to the various Evidence, Certainty or Probability.

If therefore we were to make a ſort of *Scale of Aſſent*, it might conſiſt of the following Steps: 1. *Human Faith*, an Aſſent to a doubtful Propoſition: 2. *Opinion*, to a Probable: 3. What we may term *Sentiment*, an Aſſent to a Certain Propoſition: 4. *Science*, to a certain and evident Concluſion: 5. *Intelligence* to a Self-evident Axiom: 6. *Divine Faith*, to a Divine Revelation.

SECT. IV.

To each of theſe there belong certain Principles, which are peculiarly proper to produce it. The *Principles*, of *Divine Faith* are thoſe, and thoſe only, which are contain'd in the Scriptures: Of *Intelligence*, thoſe which are properly term'd Axioms: Of *Science*, the Concluſions regularly deduced from them.

An *Axiom* is, a Propoſition which needs not, and cannot be proved. Such the following ſeem to be.

From *Natural Divinity*. 1. GOD cannot deceive or be deceiv'd. Whence flow theſe certain and evident

Concluſions: 2. Abſolute Faith is due to the Teſtimony of God: 3. Revelation never contradicts either Senſe or Reaſon. It may indeed *tranſcend* both. But it cannot poſſibly *contradict* either, rightly employ'd about its proper Object.

From *Mathematicks*. The Whole is greater than each of its Parts; equal to them all. But Mathematicians frequently lay down as ſuch, what are not Axioms, properly ſpeaking.

From *Metaphyſicks*. It is impoſſible for the ſame Thing, at the ſame Time, to be, and not to be. Some affirm this to be the only Axiom in the World: A Point not worth the Diſputing.

From *Logick*. Terms which agree in one and the ſame Third, agree with one another.

SECT. V.

Many believe, that there are no Axioms to be found in the other Arts and Sciences. But ſuch Principles at leaſt are found therein, as produce *Sentiment*, if not Science. Such are theſe. Nothing (naturally) ſprings from nothing. Nothing is the Cauſe of itſelf. What you wou'd not have another do to you, you ought not to do to another.

The Principles that ſerve to produce *Opinion*, are uſually ſtiled Maxims. They commonly hold, but not always. To this Claſs thoſe properly belong, which are, as it were in the Middle Way, between Doubtful and Certain.

The Uncertainty of Human Faith ariſes hence. In order to produce a firm Aſſent of this kind, a competent Witneſs muſt know what he ſays, and ſay what he knows, and both be apparent to him that believes it. But this is rarely the Caſe. Wherefore we have always Reaſon to ſuſpect what we have no other Proof of, than Human Teſtimony. Even when there appears no more Reaſon to doubt thereof, than of a Mathematical Demonſtration.

SECT. VI.

ACCORDING to theſe five Degrees of Aſſent, Syllogiſm might have been divided, with regard to its Matter, into Infallible, Scientifical, Certain, Probable and Doubtful. But as the two firſt of theſe produce *Science*, and any Aſſent ſhort of this, is looſely Speaking, term'd *Opinion*, it is uſually divided only into Two Sorts: 1. That which produces *Science*; And this is ſtiled *Scientifical*, otherwiſe *Demonſtrative*, and often *Demonſtration*: 2. That which produces *Opinion* (any Aſſent ſhort of Science) and is term'd *Dialectical*, i. e. arguing probably.

There are two Species of *Demonſtration*. The Firſt demonſtrates, *That a Thing is*; proving, either directly, That it is ſo: (And this is call'd *Direct Demonſtration*:) or that if it be not, ſome Abſurdity will neceſſarily follow. This is uſually call'd *Demonſtratio ab abſurdo*. We may properly term it *Oblique*.

We demonſtrate directly, either 1. By proving a Thing from its *Effect*; As, *The Sun appears black*; *Therefore it is eclipſed*: Or 2. By proving it from its *remote Cauſe*; as, *The Moon is diametrically oppoſite to the Sun*; *therefore, it is eclipſed*. But if we prove this, from the Earth's being interpoſed between them, this is

The Second Sort of Demonſtration, which demonſtrates *Why a Thing is*, by aſſigning its *Proximate* and *Immediate* Cauſe.

But there may be a Proximate which is not the *Prime* Cauſe, that is Self-evident and Indemonſtrable, Whoſe Evidence is therefore prefer'd before all other, as needing no Light, but from itſelf.

There are then Four Degrees of Demonſtration, The *Oblique* Demonſtration is Good: But the *Direct* is preferable to it. Demonſtration by the *Proximate Cauſe* is better ſtill; but the *Prime Cauſe*, beſt of all.

CHAP. II.

Of FALLACIES.

THERE is yet another Species, or Shadow rather, of Syllogiſm, which is call'd a *Fallacy*. It is, An Argument intended to deceive. Snch is

1. The Fallacy of *Equivocation*, ariſing either from an Equivocal Word, or from the ambiguous Structure of the Sentence. As, All that *believe* ſhall be ſaved. The Devils *believe*. Therefore the Devils ſhall be ſaved. This offends againſt the very firſt Rule of Syllogiſm. For it has four Terms.

2. The Fallacy of *Compoſition*, where what is granted of ſeveral Things ſeparately, is infer'd of them conjointly. As, *Two and three* are even and odd. Five is *two and three*. Therefore five is even and odd.

3. The Fallacy of *Diviſion*, when what is granted of Things taken conjointly, is infer'd of them, taken ſeparately. As, *The Planets* are Seven: The Sun and Moon are *Planets:* Therefore, the Sun and Moon are ſeven. In both theſe Syllogiſms there are four Terms.

4. The Fallacy of the *Accident*; when ſome Accidental Circumſtance is confounded with what is eſſential; As, What *deſtroys Men* ought to be prohibited. Wine *deſtroys Men*. Therefore Wine ought to be prohibited. The Major Propoſition muſt mean, What *neceſſarily deſtroys Men:* Otherwiſe it is not true: The Minor, Wine *accidentally deſtroys Men*. Therefore here alſo there are Four Terms.

5. The Fallacy of arguing from a *Particular* to a *General:* As, He that is *white as to his Teeth* is white. A Blackamoor is *white as to his Teeth*. Therefore, a Blackamoor is white. Here is a palpable Breach of the Sixth Rule of Syllogiſm.

6. The Fallacy *Ignorationis Elenchi*. An *Elenchus* is, A Syllogiſm that confutes the Opponent. Therefore he falls into this Fallacy, who thinks he confutes his Opponent, without obſerving the Rules of Contradiction.

7. The Fallacy of *begging the Queſtion*, that is, taking for granted the very Thing which ought to be proved. This is done, 1. When we attempt to prove a Thing by itſelf, or 2. By a Synonymous Word, or 3. By ſomething equally unknown, or 4. By ſomething more unknown, or 5. By arguing in a Circle: As in the famous Argument of the Papiſts, who prove the Scriptures from the Authority of the Church, and the Church from the Authority of the Scriptures.

8. The Fallacy of *ſeveral Queſtions*, as, Are *Honey* and *Gall* ſweet? It is ſolv'd, by anſwering to each Branch diſtinctly.

Many more Fallacies than theſe might be reckon'd up. For there are as many Fallacies, as there are Ways of breaking any of the Rules of Syllogiſm without being obſerv'd. But one who is thro'ly acquainted with thoſe Rules, will readily detect them all.

CHAP. III.

Of METHOD.

SECT. 1.

METHOD is, Such a Diſpoſition of the Parts of any Art or Science, that the whole may be more eaſily learned.

It is Twofold, 1. *Method of Invention*, which finds out the Rules of an Art or Science, 2. *Method of Teaching* which delivers them. The former proceeds from ſenſible and particular Things, to intelligible and univerſal: The latter, from intelligible and univerſal Things, to ſenſible and particular.

Method of Teaching is either *Perfect* or *Imperfect*. The former is either 1. *Univerſal*, by which a whole Art or Science, or 2. *Particular*, by which a Part of it only is taught. Both are either 1. *Synthetical*, which is uſed in Sciences, and beginning with the Subject of a Science, treats of its Principles, and then of their ſeveral Species, 'till from the Higheſt Genus it deſcends to the Loweſt Species: Or 2. *Analytical*, which is of Uſe in Arts; and beginning with the End or Deſign of an Art, next explains, the Subject of it, and laſtly, The Means conducive to that End.

The General Rules of Method are theſe:

In delivering an Art or Science, 1. Let nothing be wanting or redundant: 2. Let all the Parts be conſiſtent with each other: 3. Let nothing be treated of which is not homogeneous to the End of the Art or the Subject of the Science: 4. Let the Parts be connected by eaſy Tranſitions: 5. Let that precede, without which, the Things that follow cannot be underſtood; but which itſelf can be underſtood without them.

The Particular Rules are theſe, 1. The Unity of a Science depends on the Unity of its Subject; the Unity of an Art, on the Unity of its End. 2. Let the more General Parts precede the leſs General.

The *Imperfect* Method is arbitrary and popular; being no other than the Method of Prudence or Common Senſe.

SECT. II.

Mathematicians in all their Writings follow this Method, 1. They fix the Meanning of their Words, defining their Terms, each in its Place, and make it an invariable Rule, never afterwards to uſe any Term, but in the Senſe to which it is limited by that Definition: 2. They lay down the Axioms which there will be Occaſion to uſe in the Courſe of their Work: 3. They add their *Poſtulata*, which alſo they demand to be granted, as being evident of themſelves: 4. They then demonſtrate their Propoſitions, in order, and as far as may be, affirmatively: Contenting themſelves with this ſingle Rule, That whatſoever they have to prove, they take Care to prove it from ſome of the Truths, which have been granted or proved before.

If the ſame Method cannot be ſtrictly obſerved in other Sciences, yet doubtleſs it may be imitated. And the nearer any Method approaches to this, the more perfect and uſeful it is.

FINIS.

ERRATUM. Page 12. Line 22. for *three only* read *only three*.